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At the outset, the Applicants would like to thank the Office for the consideration given the present application in the Detailed Action mailed 09/03/2003. With the foregoing amendments and the ensuing remarks, the Applicants have endeavored to respond most properly to each of the points raised by the Office to ensure that the specification and claims now presented are allowable in all respects. With this in mind, the Applicants respectfully request that the Office review and allow the current specification and claims.

Claim Rejections Under 35 USC §§ 102, 103

In the Detailed Action, the Office preliminarily rejected all claims pending for consideration. Stated more particularly, the Office indicated that claims 1-4 and 8-10 were anticipated by the disclosure of U.S. Patent No. 5,724,376 to Kish, Jr., et al. The Office also found that claims 5-7 and 11-14—although not precisely shown—were rendered obvious by Kish, Jr. et al.

It is, of course, well settled that a proper anticipation rejection demands that the cited prior art reference identically disclose the claimed invention. As the Federal Circuit wrote recently, “[f]or a prior art reference to anticipate in terms of 35 U.S.C. § 102, every element of the claimed invention must be identically shown in a single reference.” *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990); See also, *PPG Industries, Inc. v. Guardian Industries Corp.*, 75 F.3d 1558, 37 USPQ2d 1618 (Fed. Cir. 1996).

It is equally clear that a proper obviousness analysis requires that one consider the

entire claim as a whole and one must compare the claimed invention to the disclosures of the prior art. When references are sought to be combined or modified, “[t]here must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination [or modification]. The knowledge cannot come from the applicant's invention itself.” *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). As the Federal Circuit wrote in 1996, “[t]o draw on hindsight knowledge of the patented invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own reconstruction—an illogical and inappropriate process by which to determine patentability.” *Sensonics, Inc. v. Aerasonic Corp.* 81 F.3d 1566, 38 USPQ2d 1551 (Fed. Cir. 1996). For each modification or combination, there must be a reasonable expectation of success and the prior art reference or references must teach or suggest *all* of the claim limitations. See, e.g., MPEP § 706.02(j); *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In the present case, the Applicant most respectfully submits that the invention set forth in claim 1 is neither taught nor suggested by the prior art since it includes limitations that would not have been obvious to a person of ordinary skill in the relevant field at the time of the invention. For example, claim 1 includes the requirement that the production of the laser include “thinning the substrate to improve the passage of light therethrough to produce a substrate remnant.” Based on the Applicants’ careful review of the disclosure, U.S. Patent No. 5,724,376 to Kish, Jr., et al. does not teach or suggest a process involving the *thinning* of a substrate as Applicants’ claim 1 requires. For this reason, the Applicants

most respectfully submit that Kish, Jr., et al., cannot properly be held to anticipate or render obvious Applicants' claimed invention.

The Applicants further submit that each of dependent claims 2-14 and 16-20 is allowable not only because it depends from allowable base claim 1 but also because it adds patentable limitation thereto. By way of example and not limitation, claim 14 specifies that "the step of thinning the substrate comprises thinning the substrate to a thickness wherein it is substantially transparent to light emitted by the laser," which is still more clearly not shown in Kish, Jr., et al. Just as clearly, Kish, Jr., et al. cannot fairly be said to teach the specific thickness dimensions claimed in claims 16 and 17. Similarly, Kish, Jr., et al. does not teach or suggest forming a substrate remnant with "a thickness equal to or less than a combined thickness of the mirror stack, the gain region, and the conductive layer" or "equal to or less than a combined thickness of the mirror stack, the gain region, the conductive plate, and the conductive layer" as claims 19 and 20 respectively require.

Newly added independent claim 21 also defines over the cited art in that it again requires a "substrate remnant," which is not found in Kish, Jr., et al. Furthermore, claim 21 is novel and nonobvious in that it requires a Vertical External Cavity Surface Emitting Laser with "an external mirror wherein the external mirror and the mirror stack together define a resonant cavity and determine a fundamental cavity mode." Such an external mirror cannot properly be said to be found in Kish, Jr., et al.

Dependent claims 22-30 add patentable limitation to allowable base claim 21. For example, claim 22 specifies that the "substrate remnant has a thickness equal to or less

than a combined thickness of the mirror stack, the gain region, and the circular and annular electrodes.” Claim 23 demands that “the circular and annular electrodes have substantially equal diameters” while claim 24 requires that “the diameters of the circular and annular electrodes are substantially greater than a combined thickness of the mirror stack, the gain region, and the substrate remnant.” Claim 25 enjoys still further patentability by specifying that “the diameters of the circular and annular electrodes are substantially equal to a diameter of the fundamental cavity mode.” Finally, claims 26-30 are patentable for all of the reasons specified previously in relation to the corresponding claims depending from claim 1.

### Conclusion

In light of the foregoing, the Applicant respectfully submits that each of the presently pending claims is directed to patentably nonobvious invention. With this in mind, the Office’s reconsideration and allowance of claims 1-14 and 16-30 are respectfully requested.

In closing, the Applicants note that they believe that they have fully responded to all issues raised in the Detailed Action. If, after consideration of the present response, there remain any open issues in this application that possibly can be resolved by a telephone interview, then the Applicants’ undersigned attorney most respectfully requests that he be called to discuss and attempt to resolve those issues.

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Respectfully submitted,

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